New York State
Severe Weather Awareness Week
April 30th to May 6th, 2017

Tornadoes

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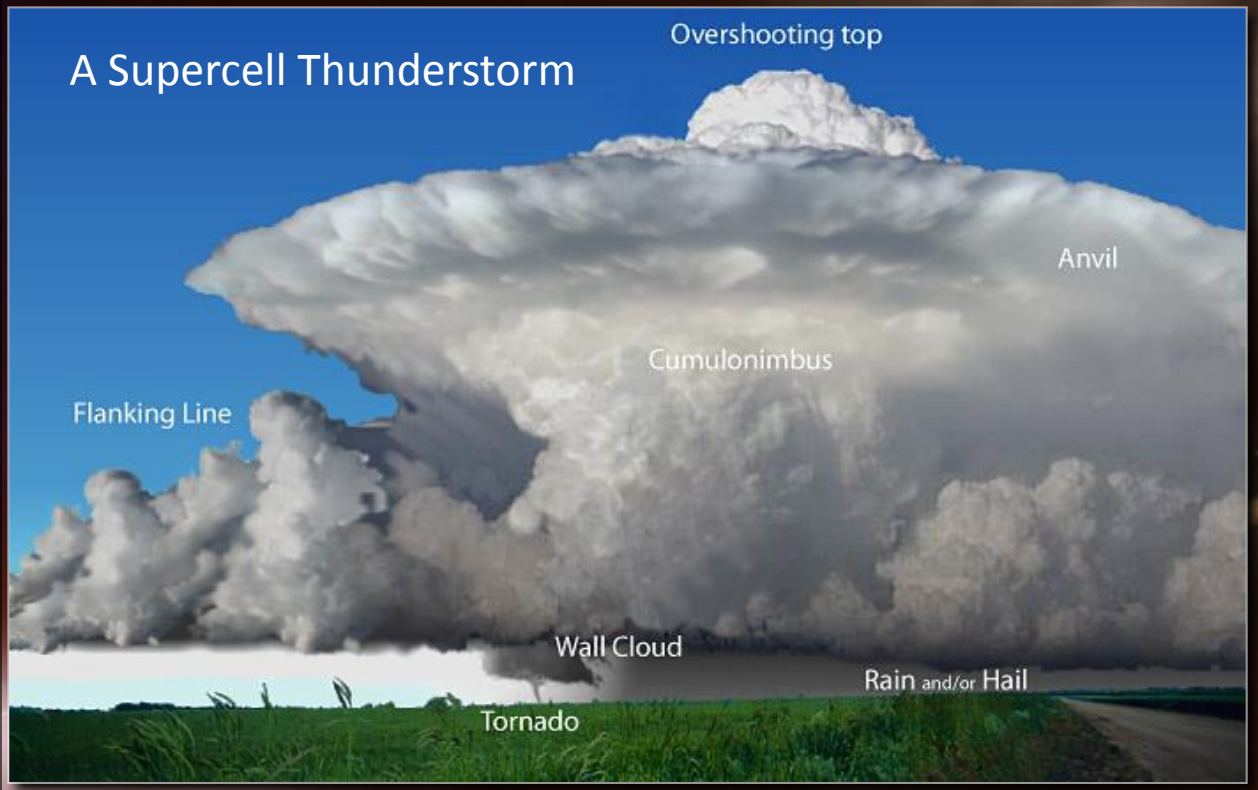
NOAA's National Weather Service

NWS Binghamton

Tornado

A tornado is a violently rotating column of air attached to a thunderstorm base and is in contact with the ground

- Tornadoes typically form from organized thunderstorms called supercells
- However, tornadoes can form within a line of storms.
- Tornados usually follow after the development of a wall cloud.
- A visible (condensation) funnel does not have to touch the ground to be a tornado.



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Tornado


Photo: Andrew Arnold

Tornadoes come in all shapes and sizes.

Tornadoes form all over the country and all times of the year.

Tornadoes can cause billions of dollars in damages.


Photo: Eddie Smith


Photo: Kumjian


Hopkins Cty, KY F4 tornado by Leonard Costanzo

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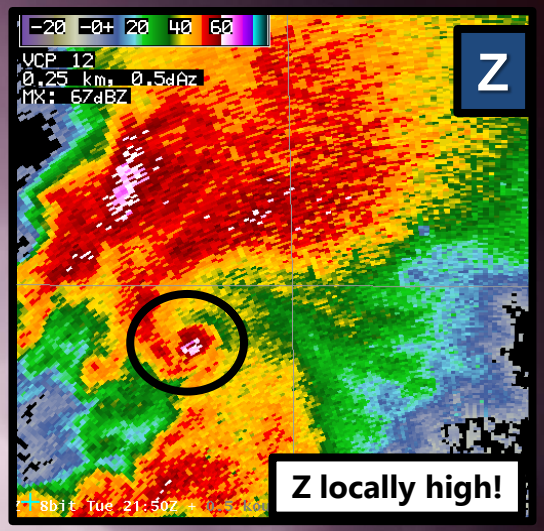
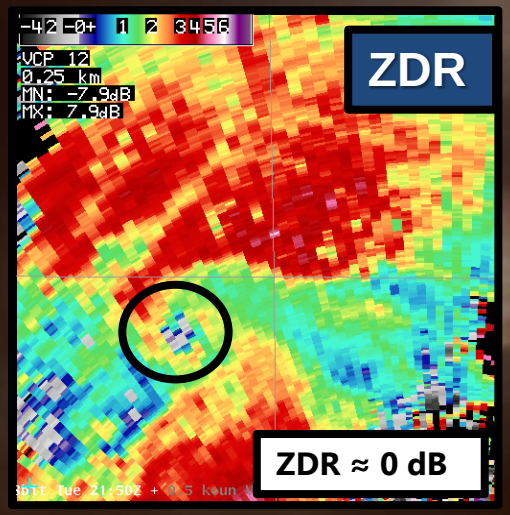
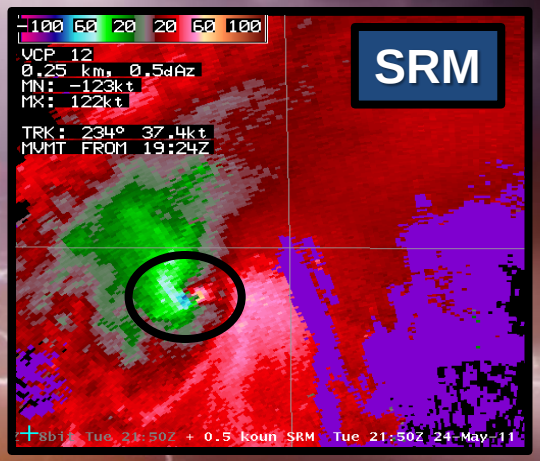
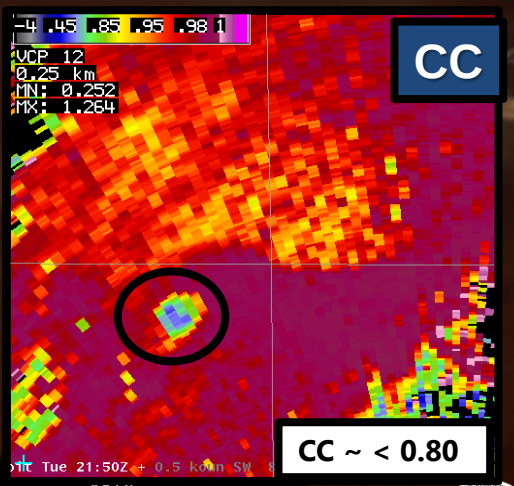
Meteorologists use Dual-Pol and Base Radar information to generate Tornado Warnings









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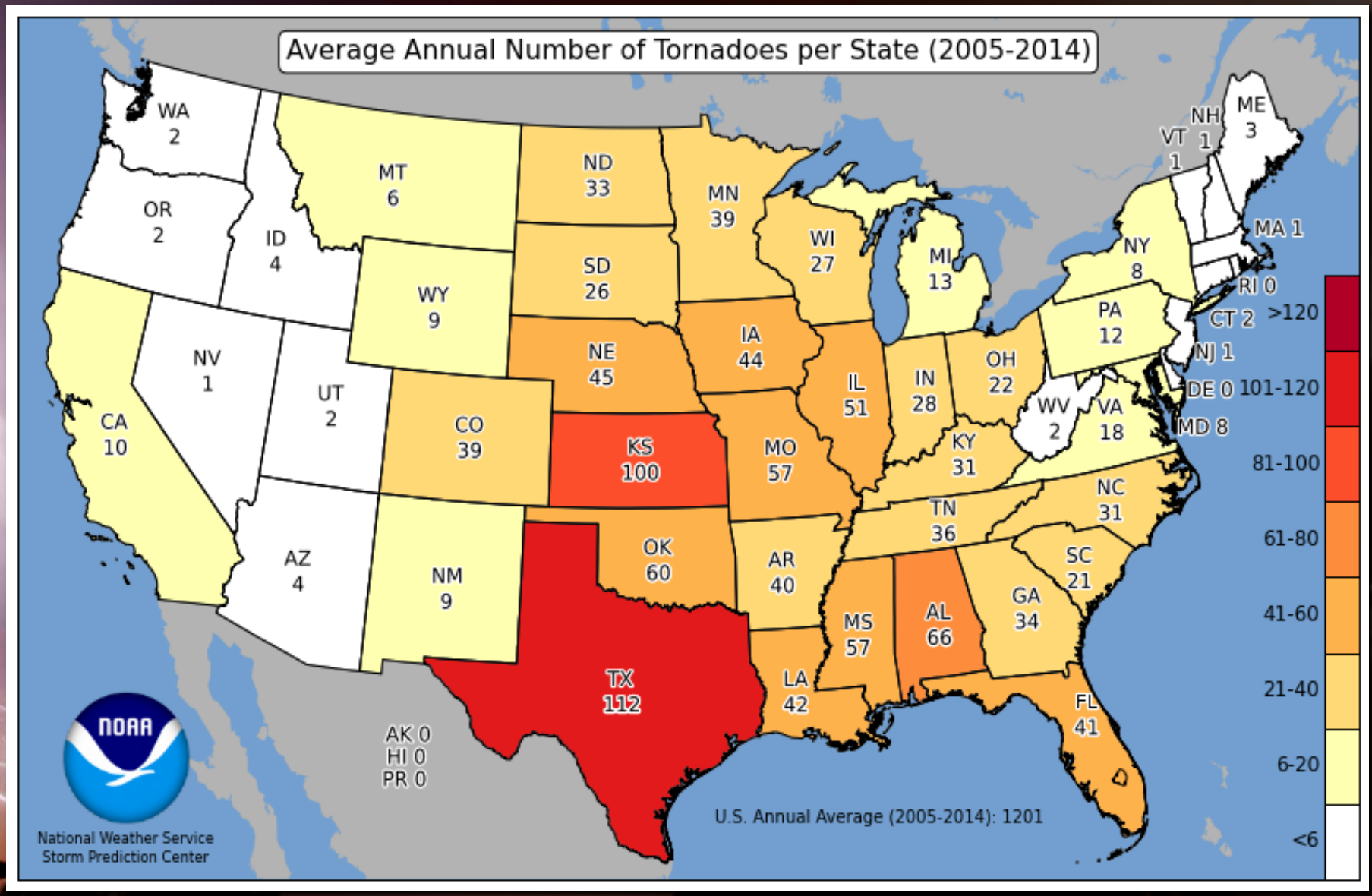
Meteorologists use Radar information to generate Tornado Warnings

velocity to determine rotation

- Locate the radar
- Determine direction of winds

Red = wind away from radar
Green = wind toward radar

Tornado



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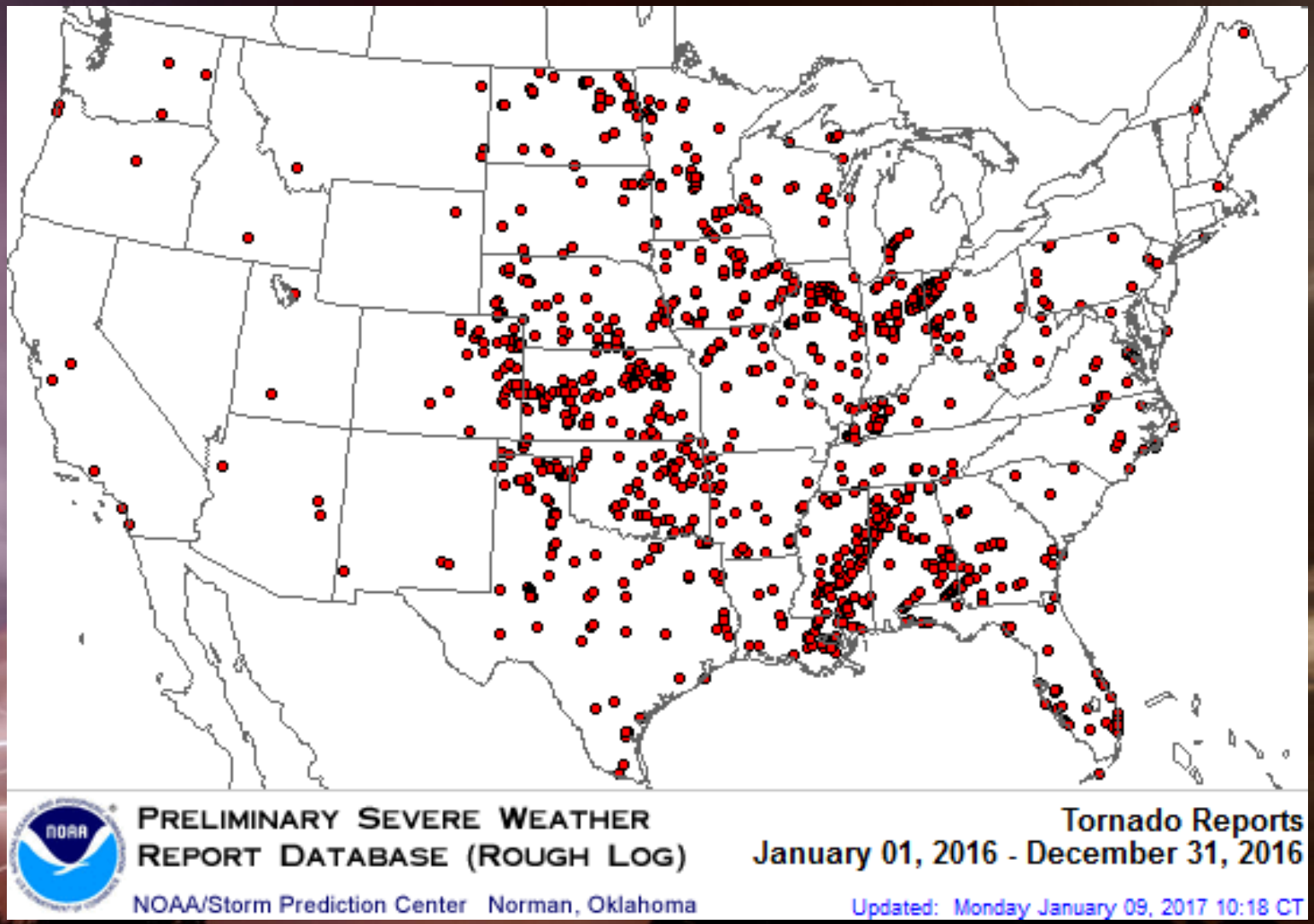
Tornado


PRELIMINARY SEVERE WEATHER
REPORT DATABASE (ROUGH LOG)
NOAA/Storm Prediction Center Norman, Oklahoma
Tornado Reports
January 01, 2016 - December 31, 2016
Updated: Monday January 09, 2017 10:18 CT

Tornado

There are 3 stages of a tornado

Stage 1
Developing

- A wall cloud forms
- Rotations increases
- Rear Flank Downdraft (RFD) develops (the lower clouds clear out)

Stage 2
Mature

- This is when the tornado is the strongest
- A funnel is most likely visible
- The RFD continues (a horseshoe-shaped clearing)

Stage 3
Dissipation

- The inflow to the storm is cut off
- The tornado shrinks and tilts
- Eventually dissipates

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Tornado

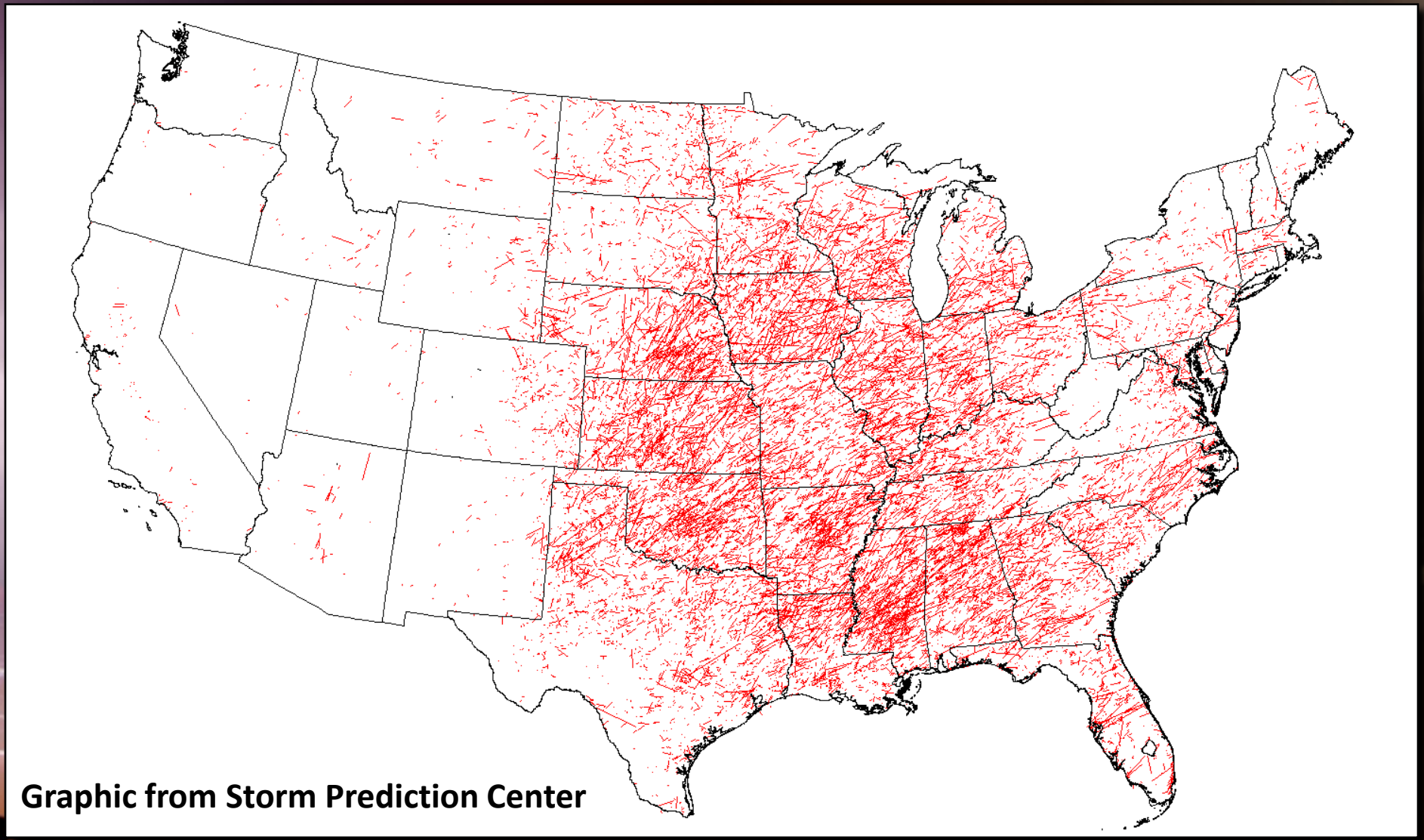

Dr. Theodore Fujita

The Enhanced Fujita Scale
Tornadoes are classified by the intensity of damage it creates to objects.

Scale	MPH	Damage
E-F0	65-85	Light
E-F1	86-109	Moderate
E-F2	110-137	Considerable
E-F3	138-167	Severe
E-F4	168-199	Devastating
E-F5	>200	Incredible

Tornado

Tornado tracks 1950-2014



Graphic from Storm Prediction Center

Tri State Tornado of 1925

- Deadliest tornado in US history.
- Killed 695 people and raced along at 60-73 mph in a 219 mile long track across parts of Missouri, Illinois and Indiana.
- Tri State tornado created F5 damage

According to eyewitness accounts, the tornado was unrecognizable at times, having turned into a huge black wall of debris that caught people off-guard.

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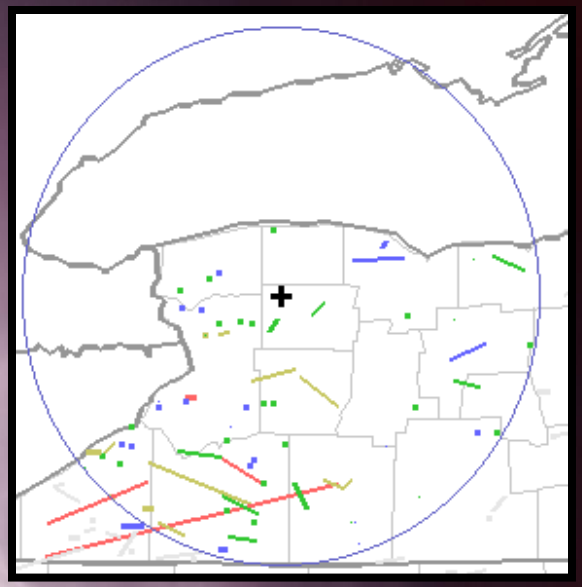
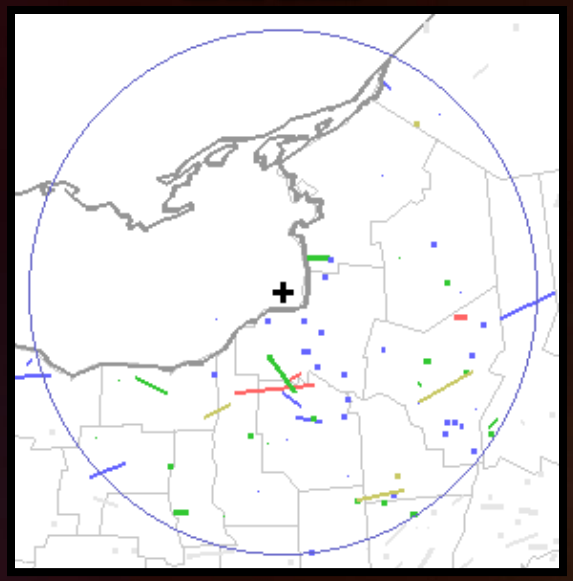
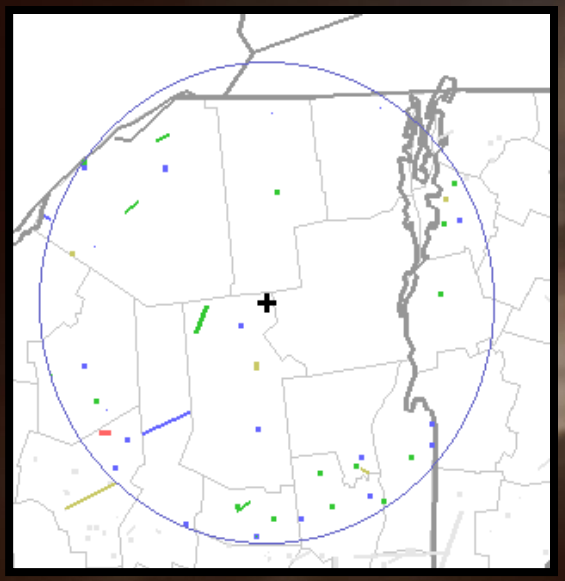
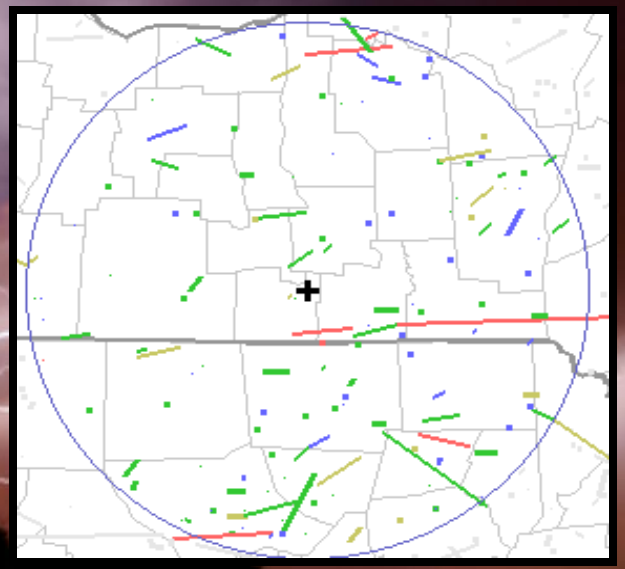
Tornado Occurrence Across the State

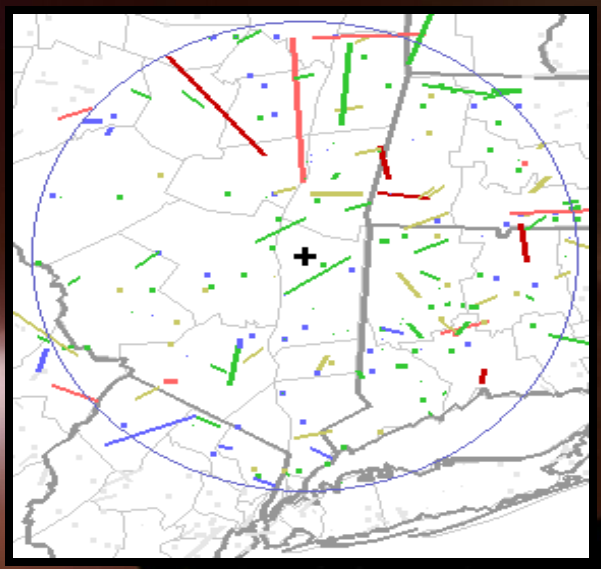
1962-2011

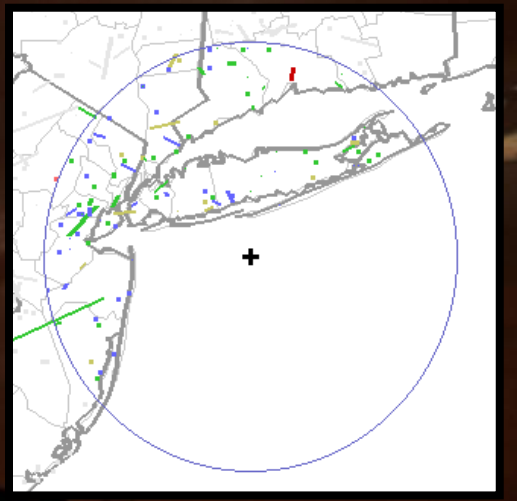












F0
F1
F2
F3
F4
F5

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Tornado Damage

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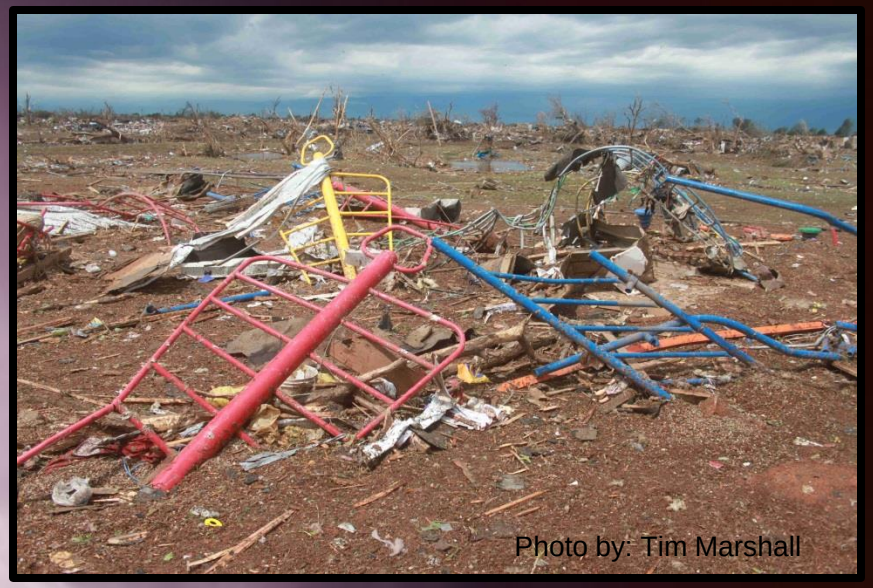
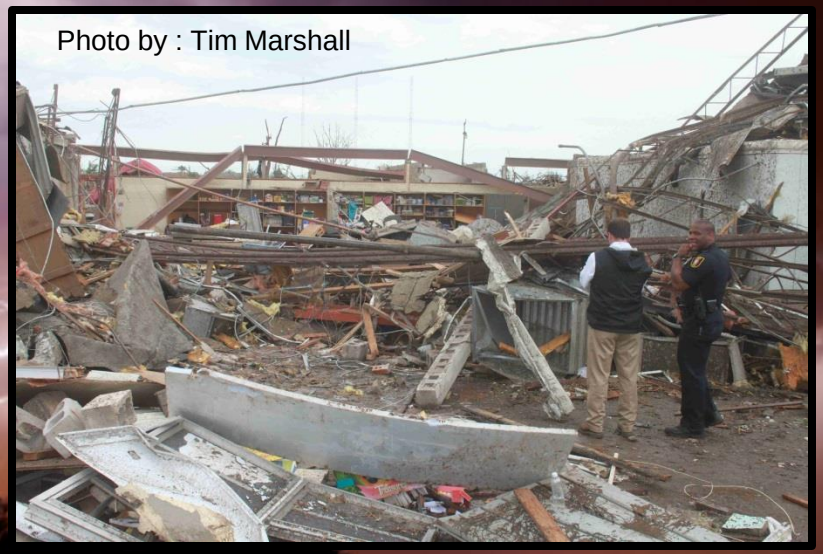
Tornado Damage at a School





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Tornado Safety

Practice, Practice, Practice a tornado drill!!!!

Take Cover!!

Inside…

First choice: Basement!

Find an area of sturdy protection. Cover yourself with a sleeping bag or mattress.

Second choice: Lowest floor, center room.

Find a small room, away from windows, usually a bathroom/closet. Crouch as low as possible to the floor. Face downward cover your head with your hands.

If you are in a mobile home…

GET OUT! These are not safe. Have a plan!!!

Outside…

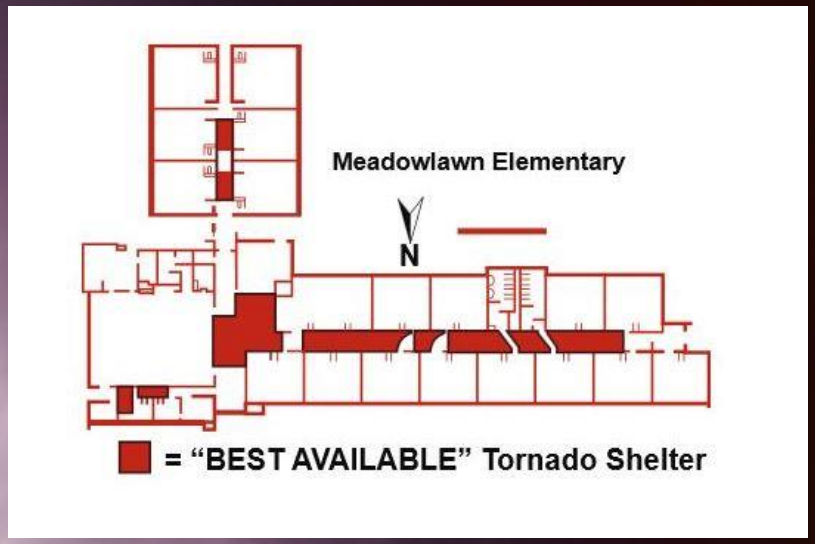
In a car:

Seek shelter in a sturdy building. DO NOT hide under an overpass.

Open Outdoors:

Lie flat and face down on the ground. Protect the back of you head with your arms. Get as far away from trees and cars as you can.

Tornado Safety At School



- Develop a plan that works for each individual school.
- All schools are built differently.
- Disseminate information in 60 seconds
- Plan for several different scenarios
- Practice!

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WATCH vs. WARNING

CAUTION

- Check the forecast often
- Monitor the skie
- Know where to take shelter

DANGER

- Take shelter immediately!
- Seek further information
- Monitor the forecast

WATCH – BE Prepared!

Conditions are favorable for severe weather in or near the watch area. Watches are issued for tornadoes, severe thunderstorms and flash floods. Issued by the Storm Prediction Center

WARNING – TAKE ACTION!

The severe weather event is imminent or occurring in the warned area. Warnings are issued for tornadoes, severe thunderstorms, flash floods and river flooding. Issued by NWS Binghamton for central New York and northeast Pennsylvania.

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